IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):   Alexey D. Zinin

Title: PROTECTION OF NETWORK INFRASTRUCTURE AND
SECURE COMMUNICATION OF CONTROL INFORMATION
THERTO

App. No.:   10/782,390   Filed: 02-19-2004

Examiner: Chriss, Andrew W   Group Art Unit: 2472

Atty. Docket No.: 1400.1376750

Mail Stop Appeal Brief - Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF

Dear Sir:

In response to the Examiner's Answer filed October 25, 2011, Appellant submits the following:

This appeal is taken under 35 U.S.C. § 134. A final Office action rejecting claims 1-38 has a mail date of September 8, 2010. A notice of appeal and a petition for extension of time were received at the United States Patent and Trademark Office on February 14, 2011. An appeal brief and a petition for extension of time were originally mailed on June 14, 2011. A notification of non-compliant appeal brief was mailed on July 11, 2011. A corrected appeal brief was mailed on July 20, 2011. An Examiner's Answer was mailed on October 25, 2011. This reply brief is being electronically filed on December 24, 2011. This reply brief is **NOT** intended to be a substitute brief replacing the original brief. Appellant submits the following sections of this reply brief remain substantially unchanged from the corrected appeal brief except for the Argument section, in which Appellant responds to the argument of the Examiner's Answer.

REAL PARTY IN INTEREST

As presently advised, Alcatel-Lucent Canada Inc.is the real party in interest in this appeal by virtue of an executed Assignment of the entire interest from the named Inventor(s), Alexey D. Zinin, to Alcatel-Lucent Canada Inc. recorded in the United States Patent and Trademark Office on June 10, 2004 at Reel 015457, Frame 0050, followed by a Certificate of Amalgamation from Alcatel Canada Inc. to Alcatel-Lucent Canada Inc. dated January 1, 2007. Appellant previously enclosed copies of the above-referenced Assignment and Certificate of Amalgamation with Appellant's appeal brief.

RELATED APPEALS AND INTERFERENCES

As presently advised, there are no other prior or pending appeals, interferences, or judicial proceedings known to Appellant, the Appellant's legal representative, or Assignee which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1-38 are pending in the present application. Claims 1-38 are finally rejected, the rejection of which is being appealed.

STATUS OF AMENDMENTS

Appellant has not amended the specification, drawings, or claims subsequent to final rejection. However, Appellant filed a response to the final rejection without amendment, for which an advisory action that did not change the status of the claims was received.

SUMMARY OF CLAIMED SUBJECT MATTER

1.   (Previously Presented) A method for communicating Layer-3 control information in a communications network comprising the steps of:

marking packets carrying the Layer-3 control information {**as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 215 of Fig. 2B**};

encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information {**as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 218 of Fig. 2B**}.

2.   (Original) The method of claim 1 wherein the step of marking further comprises:

marking the packets using a unique protocol identifier {**as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 216 of Fig. 2B**}.

3.   (Original) The method of claim 1 wherein the step of marking further comprises:

marking the packets using a link-local MPLS label {**as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 217 of Fig. 2B**}.

4.   (Original) The method of claim 1 further comprising the step of:

applying interface groups to determine when marking of control packets is to be done {**as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 201 of Fig. 2A**}.

5.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications within a particular interface group
       {as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 203 of Fig. 2A}.

6.   (Original) The method of claim 5 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a backbone interface group
       {as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 204 of Fig. 2A}.

7.   (Original) The method of claim 5 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a customer-specific
       interface group {as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 205 of Fig. 2A}.

8.   (Original) The method of claim 5 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a peer interface group {as
       described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 206 of Fig. 2A}.

9.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications between interface groups **{as described, for example, on page 8, paragraph [0022], of the specification and illustrated, for example, by 201 of Fig. 2A}**.

10.   (Original) The method of claim 9 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between backbone and customer-specific interface groups **{as described, for example, on page 8, paragraph [0022], of the specification and illustrated, for example, by 208 of Fig. 2A}**.

11.   (Original) The method of claim 9 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between customer-specific and peer interface groups **{as described, for example, on page 8, paragraph [0022], of the specification and illustrated, for example, by 209 of Fig. 2A}**.

12.   (Original) The method of claim 9 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between backbone and peer interface groups **{as described, for example, on page 8, paragraph [0022], of the specification and illustrated, for example, by 210 of Fig. 2A}**.

13.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of ICMP packets {**as described, for example, on page 9, paragraph [0023], of the specification and illustrated, for example, by 211 of Fig. 2B**}.

14.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of ping packets {**as described, for example, on page 9, paragraph [0023], of the specification and illustrated, for example, by 212 of Fig. 2B**}.

15.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of traceroute packets {**as described, for example, on page 9, paragraph [0023], of the specification and illustrated, for example, by 213 of Fig. 2B**}.

16.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of packets from Network Operations Center (NOC) hosts {**as described, for example, on page 9, paragraph [0023], of the specification and illustrated, for example, by 214 of Fig. 2B**}.

17.   (Original) The method of claim 1 wherein the step of encapsulating the packets further comprises:

encapsulating the packets according to control encapsulation {**as described, for example, on page 9, paragraph [0027], page 10, paragraph [0029], page 20,**

paragraph [0062], and/or page 21, paragraph [0063], of the specification and illustrated, for example, by control packet 123 of Fig. 1}.

18.   (Original) The method of claim 1 further comprising:

receiving unmarked control packets using rate-limited queues {as described, for example, on page 9, paragraph [0027], of the specification}.

19.   (Original) The method of claim 1 further comprising:

receiving the packets as received packets; and

processing the received packets at a line rate {as described, for example, on page 11, paragraph [0032], of the specification}.

20.   (Previously Presented) An apparatus comprising a network element {as described, for example, on page 31, paragraph [0107] of the specification and illustrated, for example, by 106 of Fig. 1} for communicating Layer-3 control information in a communications network {as described, for example, on page 31, paragraphs [0016] and [0107] of the specification and illustrated, for example, by 104, 118, and 108 of Fig. 1} adapted to perform the steps of:

marking packets carrying the Layer-3 control information {as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 215 of Fig. 2B};

encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information {as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 218 of Fig. 2B}.

21.   (Original) The apparatus of claim 20 wherein the step of marking further comprises:

marking the packets using a unique protocol identifier {**as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 216 of Fig. 2B**}.

22.   (Original) The apparatus of claim 20 wherein the step of marking further comprises:

marking the packets using a link-local MPLS label {**as described, for example, on page 9, paragraph [0024], of the specification and illustrated, for example, by 217 of Fig. 2B**}.

23.   (Original) The apparatus of claim 20 wherein the network element is further adapted to perform the step of:

applying interface groups to determine when marking of control packets is to be done {**as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 201 of Fig. 2A**}.

24.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications within a particular interface group {**as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 203 of Fig. 2A**}.

25.   (Original) The apparatus of claim 24 wherein the step of applying interface groups to packet communications within a particular interface group further comprises

the step of:

applying interface groups to packet communications within a backbone interface group **{as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 204 of Fig. 2A}.**

26.   (Original) The apparatus of claim 24 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a customer-specific interface group **{as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 205 of Fig. 2A}.**

27.   (Original) The apparatus of claim 24 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a peer interface group **{as described, for example, on page 8, paragraph [0021], of the specification and illustrated, for example, by 206 of Fig. 2A}.**

28.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications between interface groups **{as described, for example, on page 8, paragraph [0022], of the specification and illustrated, for example, by 207 of Fig. 2A}.**

29.   (Original) The apparatus of claim 28 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between backbone and customer-
        specific interface groups {**as described, for example, on page 8, paragraph
        [0022], of the specification and illustrated, for example, by 208 of Fig. 2A**}.

30.   (Original) The apparatus of claim 28 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between customer-specific and
        peer interface groups {**as described, for example, on page 8, paragraph [0022],
        of the specification and illustrated, for example, by 209 of Fig. 2A**}.

31.   (Original) The apparatus of claim 28 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between backbone and peer
        interface groups {**as described, for example, on page 8, paragraph [0022], of
        the specification and illustrated, for example, by 210 of Fig. 2A**}.

32.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of ICMP packets {**as described, for
        example, on page 9, paragraph [0023], of the specification and illustrated, for
        example, by 211 of Fig. 2B**}.

33.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of ping packets **{as described, for example, on page 9, paragraph [0023], of the specification and illustrated, for example, by 212 of Fig. 2B}**.

34.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of traceroute packets **{as described, for example, on page 9, paragraph [0023], of the specification and illustrated, for example, by 213 of Fig. 2B}**.

35.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of packets from Network Operations Center (NOC) hosts **{as described, for example, on page 9, paragraph [0023], of the specification and illustrated, for example, by 214 of Fig. 2B}**.

36.   (Original) The apparatus of claim 20 wherein network element is further adapted to encapsulate the packets according to control encapsulation **{as described, for example, on page 9, paragraph [0027], page 10, paragraph [0029], page 20, paragraph [0062], and/or page 21, paragraph [0063], of the specification and illustrated, for example, by control packet 123 of Fig. 1}**.

37.　(Original)　The method of claim 20 wherein the network element is further adapted to receive unmarked control packets using rate-limited queues {**as described, for example, on page 9, paragraph [0027], of the specification**}.

38.　(Original)　The apparatus of claim 20 wherein the network element is further adapted to receive the packets as received packets and to process the received packets at a line rate {**as described, for example, on page 11, paragraph [0032], of the specification**}.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are as follow:

The First Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 1, 2, 4, 17, 20, 21, 23 and 36 under 35 U.S.C. §
103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application
Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US
2002/0067725 A1).

The Second Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 3 and 22 under 35 U.S.C. 103(a) as being
unpatentable over McDysan (U.S. Patent Application Publication 2003/0112755 A1) in
view of Oguchi (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims
1 and 20 above, and further in view of Nakamichi et al (U.S. Patent Application
Publication US 2002/0085498 A1).

The Third Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 5-12 and 24-31 under 35 U.S.C. § 103(a) as
allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication
2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US
2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Yu et al.
(United States Patent Application Publication US 2004/0010583 A1).

The Fourth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 13 and 32 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Holden et al. (United States Patent No. 5,802,178).

The Fifth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 14 and 33 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Pan et al. (United States Patent 7,336,615).

The Sixth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 15 and 34 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Fotedar et al. (United States Patent Application Publication 2004/0085965 A1).

The Seventh Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 16 and 35 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US

2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Tuomenoksa et al. (United States Patent Application Publication 2002/0023210 A1).

The Eighth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 18 and 37 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 1 and 20 above, and further in view of Johansson (United States Patent 6,061,330).

The Ninth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 19 and 38 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 1 and 20 above, and further in view of Hussey et al. (United States Patent Application Publication 2001/0049744 A1).

ARGUMENT

Claims 1-38 are pending in the application. The Examiner has rejected claims 1-38. Appellant appeals the rejection of claims 1-38. Appellant submits this reply brief is **NOT** intended to be a substitute brief replacing the original brief. Appellant does not substitute or repeat in this reply brief Appellant's arguments set forth in Appellant's corrected appeal brief but rather responds to the Examiner's Answer and supplements Appellant's previously submitted arguments accordingly. Therefore, Appellant respectfully requests the Board to consider this reply brief in conjunction with Appellant's corrected appeal brief, not as an alternative to or substitute for Appellant's corrected appeal brief. While, in this reply brief, Appellant responds to the groupings of claims the Examiner set forth in the Examiner's Answer, Appellant submits Appellant presented separate arguments for individual claims in Appellant's original brief. Therefore, Appellant submits Appellant's original brief in conjunction with this reply brief argue for the allowability of the claims separately.

The First Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 1, 2, 4, 17, 20, 21, 23 and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1). Appellant respectfully disagrees.

<u>Claims 1 and 20:</u>

In the Examiner's Answer, regarding claims 1 and 20, the Examiner states as follows:

> Regarding Claims 1 and 20, Appellant states "the cited portions of the cited references appear to disclose or suggest "marking packets carrying Layer-3 control information" and further states that "Examiner's allegation of "which is known in the art as implementation of 'Layer-3' in the OSI 7-layer Interconnect Model" does not appear to allege teaching as to, for example, "Layer-3 control information." Examiner respectfully disagrees. Examiner notes that Appellant has not specifically pointed out how the language of the claims patentably distinguishes them from the references. Examiner turns to Appellant's specification at paragraph 0004, which defines the OSI 7-layer model. More specifically, the network layer is defined as Layer-3. Examiner further turns to The OSI Reference Model, which was provided to Appellant with the Office Action mailed June 5, 2009, wherein Layer-3 (i.e., the Network Layer) corresponds to the Internet Protocol (IP). Turning to the McDysan reference, paragraph 0009 recites: "Diffsery is an IP QoS architecture that achieves scalability by conveying an aggregate traffic classification within a DS field (e.g., the IPv4 Type of Service JOS) byte or IPv6 traffic class byte) of each IP-layer packet header. The first six bits of the DS field encode a Diffsery Code Point (DSCP) that requests a specific class of service or Per Hop Behavior (PHB) for the packet at each node along its path within a Diffsery domain." Examiner further notes that the claimed "control information" is not further defined in the claim language so as to require a structure or feature of said information other than being "Layer-3 control information." As the DSCP marking disclosed in McDysan controls the QoS applied to a packet (e.g., in paragraphs 0037 and 0042) and further is indicative of an IP QoS (i.e., Layer-3), Examiner submits that the claim limitation "Layer-3 control information" is met by the disclosure of McDysan. Appellant further states paragraph 0042 of McDysan "fails to disclose or suggest, and teaches away from "marking packets carrying the Layer-3 control information." Examiner respectfully disagrees. Examiner notes that while alleging that the disclosure of McDysan teaches away from marking packets, Appellant has not specifically pointed out how the disclosure teaches away or how the language of the claims patentably distinguishes them from the references. As described above, McDysan discloses marking packets via a DSCP code point in IP packets, and therefore meets the claim limitation "marking packets carrying the Layer-3 control information." Appellant further states that "Examiner has not alleged teaching to "...encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information." Examiner respectfully disagrees. Examiner notes that the claim language is silent as to how the "Layer-2 frames" are encapsulated such that the claimed "unique identify(ication)" is achieved. As such, Examiner submits that the claim language "to uniquely identify Layer-2 frames as carrying trusted control information" simply expresses the intended result of the "encapsulation" step positively recited. Examiner again turns to Appellant's specification at paragraph 0004, which defines the OSI 7-layer model. More specifically, the Data Link layer is defined as Layer-2. Examiner further turns to The OSI Reference Model, which was provided to

Appellant with the Office Action mailed June 5, 2009, wherein Layer-2 (i.e., the Data Link Layer) is responsible for providing Ethernet service and corresponds to the PPP protocol. Oguchi discloses encapsulating an L2TP VPN packet comprising Layer-2 encapsulation (paragraph 0215, Figure 25, wherein a packet containing L2TP is encapsulated with a PPP or Ethernet header). As shown by the OSI reference model, Examiner notes that point-to-point protocol (PPP) and Ethernet are known in the art as an implementation of "Layer 2" of the OSI 7-layer Interconnect Model (i.e., the data link layer). As the claim language is silent as to the format of the encapsulation or how the encapsulation would be performed in order to achieve the claimed result, Examiner submits that the Layer-2 encapsulation disclosed in Oguchi reads on the claim limitation "...encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information." Appellant further states that "the Examiner's proposition as to allegedly establishing obviousness must be understood in the context of case law and Office practice that recognizes that evidence of "teaching away" undermines such as allegation of obviousness." However, Examiner respectfully notes that Appellant has merely alleged that the disclosure of McDysan teaches away from "marking packets carrying the Layer-3 control information" (see page 22 of the Appeal Brief filed July 25, 2011) and has not presented any evidence as to how McDysan teaches away from the claim limitation. Appellant further states that "Examiner has not provided a plausible rationale as to why the prior art references would have worked together to render the claims obvious" and further states "the Examiner's alleged motivation is not looking only at the problem Appellant was trying to solve, which Appellant argues is inconsistent with *KSR Intl Co v. Teleflex, Inc.*" Examiner respectfully disagrees. Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." Examiner submits that as McDysan and Oguchi are both directed to the formatting and transmission of VPN traffic, the references are analogous art. As such, Examiner submits that the combination of the Layer-3 control packet marking disclosed in McDysan and the L2TP encapsulation disclosed in Oguchi, whereby the encapsulation identifies the packet as a tunneled (i.e., trusted) packet, reads on the broadest reasonable interpretation of "marking packets carrying the Layer-3 control information" and "...encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information." In response to Appellant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, Oguchi provides an explicit motivation for combining or modifying the teachings of the prior art to produce the claimed invention, establishing a need in the art to discover virtual routers within a network and establish a virtual private network by simplifying the settings to accomplish the same (see paragraph 0085).

While the Examiner, in the Examiner's Answer, states, "...the claim language is silent as to how the 'Layer-2 frames' are encapsulated such that the claimed "unique identify(ication)" is achieved" and "As such, Examiner submits that the claim language "to uniquely identify Layer-2 frames as carrying trusted control information" simply expresses the intended result of the "encapsulation" step positively recited," Appellant submits the Examiner appears to attempt to disregard the claim language. Based on the Examiner's use of the phrase "...simply expresses the intended result of...step positively recited," the Examiner appears to attempt to apply MPEP § 2111.04; *Minton v. Nat'l Ass'n of Securities Dealers, Inc.*, 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620 (Fed. Cir. 2003); and/or *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329, 74 USPQ2d 1481, 1483 (Fed. Cir. 2005) to the interpretation of claims 1 and 20. However, Appellant notes MPEP § 2111.04 pertains to "'Adapted to,' 'Adapted for,' 'Wherein,' and 'Whereby' Clauses," none of which is present in claim 1 or claim 20. Moreover, both Federal Circuit cases cited in MPEP § 2111.04 appear to pertain specifically to "whereby" clauses. Thus, Appellant submits neither the MPEP nor the case law provide a basis for disregarding portions of the claim language of claims 1 and 20.

While MPEP § 2111.04 states, "However, the court noted (quoting *Minton v. Nat'l Ass'n of Securities Dealers, Inc.*, 336 F.3d 1373, 1381, 67 USPQ2d 1614, 1620 (Fed. Cir. 2003)) that a 'whereby clause in a method is not given weight when it simply expresses the intended result of a process step positively recited,'" Appellant notes the court stated as follows:

> The district court was also correct in not giving weight to the "traded efficiently" phrase in the whereby clause of the executing step. A whereby clause in a method claim is not given weight when it simply expresses the intended result of a process step positively recited. *Tex. Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 1172 (Fed. Cir. 1993). That is the case here. The term "efficiently" on its face does not inform the mechanics of how the trade is executed, and nothing in the specification or

the prosecution history suggests otherwise. Rather, the term "efficiently" is a laudatory one characterizing the result of the executing step. We therefore hold that the district court correctly declined to give the term the meaning Minton has proposed.

Appellant submits "...to uniquely identify Layer-2 frames as carrying trusted control information" is not merely a laudatory remark characterizing a result of "encapsulating the packets at Layer-2." Rather, Appellant submits such language does inform how the encapsulating is performed. Thus, Appellant submits such language should be considered in construing the claim.

Appellant notes MPEP § 2111.04 also states, "In *Hoffer v. Microsoft Corp.*, 405 F.3d 1326, 1329, 74 USPQ2d 1481, 1483 (Fed. Cir. 2005), the court held that when a 'whereby' clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention." Unlike the "traded efficiently" of *Minton*, Appellant submits "...to uniquely identify Layer-2 frames as carrying trusted control information" conditionally modifies "encapsulating the packets at Layer-2." Therefore, even if such language were a "whereby" clause, which it is not, and MPEP § 2111.04, *Minton*, and/or *Hoffer*, were to be applicable, Appellant submits claims 1 and 20 would still be patentable.

Appellant notes the Examiner, in the Examiner's Answer, alleges teaching of the Oguchi reference only as "Oguchi discloses encapsulating an L2TP VPN packet comprising Layer-2 encapsulation (paragraph 0215, Figure 25, wherein a packet containing L2TP is encapsulated with a PPP or Ethernet header)" but does not allege any teaching as to "...to uniquely identify Layer-2 frames as carrying trusted control information." Appellant submits the cited portions of the Oguchi reference fail to teach anything as to "...to uniquely identify Layer-2 frames as carrying trusted control information."

While the Examiner, in the Examiner's Answer, states, "...the claim language is silent as to the format of the encapsulation or how the encapsulation would be performed in order to achieve the claimed result," Appellant submits the Examiner's allegations of the claim language being silent as to particular aspects do not confer upon the Examiner *carte blanche* to disregard aspects for which the claim language is not silent but positively recited as a limitation. As Appellant submits the Examiner has not shown the cited portions of the cited references to disclose or suggest "...to uniquely identify Layer-2 frames as carrying trusted control information," Appellant submits the Examiner has not shown the cited portions of the cited references to render obvious "...encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information."

While the Examiner, in the Examiner's Answer, states, "However, Examiner respectfully notes that Appellant has merely alleged that the disclosure of McDysan teaches away from 'marking packets carrying the Layer-3 control information' (see page 22 of the Appeal Brief filed July 25, 2011) and has not presented any evidence as to how McDysan teaches away from the claim limitation," Appellant respectfully disagrees. Appellant notes Appellant cited as evidence paragraph [0042] of the McDysan (US 2003/0112755 A1) reference. Appellant notes such portion of the McDysan reference states, in part, "Marker M0 remarks all packets received at LP-2 110b with DSCP 0000, thus identifying the packets as best-effort traffic." Appellant submits McDysan's alleged teaching as to remarking "all packets received" (with the same alleged remarking teaches away from "marking packets carrying the Layer-3 control information," as "all packets received," all of which allegedly remarked with the same alleged remarking would be indistinguishable from one another based on the alleged remarking, thereby negating any alleged teaching of "marking packets carrying the Layer-3 control information" and leading to an absurd interpretation, not the broadest reasonable interpretation.

Moreover, Appellant submits the Examiner persists, in the Examiner's Answer, with the Examiner's circular allegations of "…marking packets…" and "…packets carrying the Layer-3 control information." in alleging teaching as to "…marking packets carrying the Layer-3 control information." The Examiner alleges "As the DSCP marking disclosed in McDysan controls the QoS applied to a packet (e.g., in paragraphs 0037 and 0042) and further is indicative of an IP QoS (i.e., Layer-3), Examiner submits that the claim limitation "Layer-3 control information" is met by the disclosure of McDysan." However, assuming *arguendo* the alleged "DSCP marking" allegedly teaches "Layer-3 control information," there would be no need for "marking packets carrying the Layer-3 control information," as all "packets carrying the Layer-3 control information" would already (supposedly) necessarily be "marked" (supposedly) merely by virtue of "carrying Layer-3 control information." Again, Appellant submits such allegations lead to an absurd interpretation, not the broadest reasonable interpretation.

Furthermore, while the Examiner states, in the Examiner's Answer, "As such, Examiner submits that the combination of the Layer-3 control packet marking disclosed in McDysan and the L2TP encapsulation disclosed in Oguchi, whereby the encapsulation identifies the packet as a tunneled (i.e., trusted) packet, reads on the broadest reasonable interpretation of 'marking packets carrying the Layer-3 control information' and '…encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information,'" Appellant submits such alleged combination fails to render obvious the subject matter of claims 1 and 20. Assuming *arguendo* McDysan allegedly discloses "Layer-3 control packet marking" and "the L2TP encapsulation" of Oguchi allegedly "identifies the packet as a tunneled (i.e., trusted) packet," Appellant submits "the L2TP encapsulation" of Oguchi would still fail to teach or suggest "…encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying trusted control information," as all L2TP encapsulated packets, not just those subject to the alleged "Layer-3 control packet marking" of McDysan, would

(supposedly) be identified as "tunneled (i.e., trusted) packet[s]," so "the L2TP encapsulation" of Oguchi would fail "...to uniquely identify Layer-2 frames as carrying trusted control information." Thus, Appellant submits the Examiner's alleged claim interpretation is apparently inconsistent with the "broadest reasonable interpretation" of the claim language of claims 1 and 20.

Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to the broadest <u>reasonable</u> interpretation of claims 1 and 20. Therefore, Appellant submits the Examiner erred in rejecting claims 1 and 20.

Claims 2 and 21:

In the Examiner's Answer, regarding claims 2 and 21, the Examiner states as follows:

> Regarding Claims 2 and 21, Appellant states "Examiner does not explain how the Examiner considers "a three bit differentiated services code point value ... to be a "unique protocol identifier." Examiner respectfully disagrees. Examiner notes that the DSCP value disclosed in McDysan uniquely identifies how the packet is to be treated (e.g., binary value of 000 indicating the packet is to be treated as best-effort in paragraph 0042) and further notes that the "unique protocol identifier" is not further limited in the claim language so as to require a specific format or structure.

While the Examiner, in the Examiner's Answer, states, "Examiner notes that the DSCP value disclosed in McDysan uniquely identifies how the packet is to be treated (e.g., binary value of 000 indicating the packet is to be treated as best-effort in paragraph 0042)," Appellant again notes the Examiner's circular allegations of "...marking packets..." and "...packets carrying the Layer-3 control information." in alleging teaching as to "...marking packets carrying the Layer-3 control information," as discussed above with respect to claims 1 and 20. Thus, Appellant submits the Examiner's assertions with regard to "the DSCP value disclosed in McDysan" with respect to claims 2 and 21 are an extension of such circular allegations which impair the Examiner's alleged "broadest reasonable interpretation" of claims 2 and 21.

While the Examiner, in the Examiner's Answer, states, "[Examiner] further notes that the 'unique protocol identifier' is not further limited in the claim language so as to require a specific format or structure," Appellant submits the Examiner's apparent attempt to recycle the singular alleged teaching of "the DSCP value disclosed in McDysan" to now allegedly read on "...a unique protocol identifier" as well as allegedly reading on "marking..." and "...the Layer-3 control information" extends beyond the broadest reasonable interpretation of claims 2 and 21.

Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to the broadest <u>reasonable</u> interpretation of claims 2 and 21. Therefore, Appellant submits the Examiner erred in rejecting claims 2 and 21.

Claim 4 and 23:

In the Examiner's Answer, regarding claims 4 and 23, the Examiner states as follows:

> Regarding Claims 4 and 23, Appellant states "the alleged teaching of "to send values to a packet marker" does not teach or suggest "...to determine when marking of control packets is to be done." Examiner respectfully disagrees. Examiner notes that Appellant has not specifically pointed out how the language of the claims patentably distinguishes them from the references. McDysan, at Figure 5 and paragraph 0036, discloses a classifier in the LAN port determining, via by reference to a classifier table indexed by multiple indices (e.g., source port and destination port), to determine an interface for communication and to send values to a packet marker. Further, at paragraphs 0037 and 0042, a determination is made with regard to marking of a packet (e.g., marking a packet when received from an access network). As the DSCP marking disclosed in McDysan controls the QoS applied to a packet (e.g., in paragraphs 0037 and 0042) and further is indicative of an IP QoS (i.e., Layer-3), Examiner submits that the claim limitation "marking of a control packet" is met by the disclosure of McDysan.

While the Examiner, in the Examiner's Answer, states, "As the DSCP marking disclosed in McDysan controls the QoS applied to a packet (e.g., in paragraphs 0037 and 0042) and further is indicative of an IP QoS (i.e., Layer-3), Examiner submits that the claim limitation "marking of a control packet" is met by the disclosure of

McDysan," Appellant again notes the Examiner's circular allegations of "...marking packets..." and "...packets carrying the Layer-3 control information." in alleging teaching as to "...marking packets carrying the Layer-3 control information," as discussed above with respect to claims 1 and 20. Thus, Appellant submits the Examiner's assertions with regard to "the DSCP value disclosed in McDysan" with respect to claims 4 and 23 are an extension of such circular allegations which impair the Examiner's alleged "broadest reasonable interpretation" of claims 4 and 23.

While the Examiner, in the Examiner's Answer, states, "As the DSCP marking disclosed in McDysan controls the QoS applied to a packet (e.g., in paragraphs 0037 and 0042) and further is indicative of an IP QoS (i.e., Layer-3), Examiner submits that the claim limitation "marking of a control packet" is met by the disclosure of McDysan," Appellant submits the Examiner alleges a DSCP value to be the attribute that allegedly makes a packet "a control packet," yet the Examiner also alleges the DSCP value to be the attribute that allegedly provides "marking of" the alleged "control packet." Thus, Appellant submits such allegations lead to an absurd interpretation, as, according to the Examiner's allegations, Appellant submits there could be no way of "applying interface groups to determine when marking of control packets is to be done," as any packets that were allegedly "control packets" would allegedly already have been "marked" (supposedly) by virtue of their alleged status as "control packets." Therefore, Appellant submits the Examiner's apparent interpretation extends beyond the broadest reasonable interpretation of claims 4 and 23.

Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to the broadest <u>reasonable</u> interpretation of claims 4 and 23. Therefore, Appellant submits the Examiner erred in rejecting claims 4 and 23.

Claim 17 and 36:

In the Examiner's Answer, regarding claims 17 and 36, the Examiner states as follows:

> Regarding Claims 17 and 36, Appellant states "the cited portions of the cited reference do not appear to disclose, as an example, according to control encapsulation." Examiner respectfully disagrees. Examiner notes that Appellant has not specifically pointed out how the language of the claims patentably distinguishes them from the references. Further, Examiner notes that the claimed "control encapsulation" is not further defined in the claim language so as to require a certain format for the encapsulation. As such, Examiner gives the claim language is broadest reasonable interpretation without unnecessarily importing limitations from the specification. Oguchi discloses encapsulating an L2TP VPN packet (i.e., performing control encapsulation) comprising Layer 3 encapsulation (paragraph 0215, Figure 25, wherein a packet containing an IP header).

While the Examiner alleges, in the Examiner's Answer, "Oguchi discloses encapsulating an L2TP VPN packet (i.e., performing control encapsulation) comprising Layer 3 encapsulation (paragraph 0215, Figure 25, wherein a packet containing an IP header)," Appellant submits the Examiner continues to parenthetically state, "(i.e., performing control encapsulation)" still without any explanation or justification. Moreover, Appellant submits paragraph [0215], as cited by the Examiner, merely states "It is to be noted that the present embodiment has dealt with the case where the L2TP tunneling is used as a tunneling technique" and "The format of the encapsulated packet transmitted through the L2TP tunnel in such case is the same as that shown in FIG. 25." Appellant submits such teaching fails to disclose or suggest "control encapsulation." Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of obviousness as to claims 17 and 36. Therefore, Appellant submits the Examiner erred in rejecting claims 17 and 36.

The Second Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 3 and 22 under 35 U.S.C. 103(a) as being unpatentable over McDysan (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 1 and 20 above, and further in view of Nakamichi et al (U.S. Patent Application Publication US 2002/0085498 A1). Appellant respectfully disagrees.

Claims 3 and 22:

In the Examiner's Answer, regarding claims 3 and 22, the Examiner states as follows:

> Regarding Claims 3 and 22, Appellant states ""to allow a node in a communications network to collect traffic information and perform load sharing depending on traffic conditions "...would not have motivated one of ordinary skill in the art to combine the alleged teachings of the cited portions of the cited references." Examiner respectfully disagrees. Examiner submits recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, Nakamichi discloses, at paragraph 0012, a need to allow a node in a communication network to collect traffic information to thereby achieve load sharing depending on the conditions of the traffic. Therefore, Examiner notes that the references themselves provide a motivation to combine the disclosed teachings.

Appellant notes the Examiner's statement above appears to be a verbatim copy of the portion of the Examiner's Response to Arguments in the final Office action pertaining to claims 3 and 22. Appellant has addressed such statement with respect to claim 3 and claim 22 in Appellant's corrected appeal brief of July 25, 2011. As this reply brief is **NOT** intended to be a substitute brief replacing the original brief, Appellant relies on Appellant's argument set forth in the original brief.

The Third Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 5-12 and 24-31 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Yu et al. (United States Patent Application Publication US 2004/0010583 A1). Appellant respectfully disagrees.

Claims 5 and 24:

In the Examiner's Answer, regarding claims 5 and 24, the Examiner states as follows:

> Regarding Claims 5 and 24, Appellant states that "the cited portion of the Yu references does not teach or suggest "applying interface groups to determine when marking of control packets is to be done," comprise "applying interface groups to packet communications within a particular interface group," as Appellant submits instructing devices to assume mastership of a virtual IP address teaches away from "applying interface groups to determine when marking of control packets is to be done." Examiner notes that the claim language is not further defined so as to further limit the step of applying interface groups or the features of a particular interface group. In determining the broadest reasonable interpretation of the claimed "applying interface groups," Examiner turns to paragraphs 0019-0025 of Appellant's specification. However, in looking to the cited paragraphs, Appellant's specification does not provide any further specificity to the act of "applying interface groups," aside from describing "a new concept of "interface groups, whereby a router can determine whether a packet should be marked or not" (see paragraph 0025 of Appellant's specification). As shown by the disclosure, "determining whether a packet should be marked or not" is a result of the "concept of interface groups," but the actual process of "applying interface groups" is not described. Further, as claimed, Examiner submits the result of "to determine when marking of control packets is to be done" simply expresses the intended result of the "applying interface groups" step positively recited and there is no further description in the specification or the claim language of how "applying interface groups" leads to such a determination. Per MPEP 2106: "USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 105455, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003) (claims must be interpreted "in view of

the specification" without importing limitations from the specification into the claims unnecessarily). *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320,1322 (Fed. Cir. 1989)." Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications. Accordingly, Yu discloses assigning interfaces to communicate within and between various types of networks (see Figures 1 and 4 and paragraphs 0022 and 0025). In combination with the packet marking determination disclosed in McDysan (paragraphs 0037 and 0042, wherein the type of marking for a packet is determined), Examiner submits that the combination of McDysan, Oguchi, and Yu renders the claim limitation "applying interface groups to determine when marking of control packets is to be done." Appellant further states "Examiner has not shown how an alleged motivation of "to withstand failures of network device components, without triggering unnecessary failover in a network device" would have motivated one of ordinary skill in the art to combine the teachings of Yu, directed to a method and apparatus for defining failover events in a network device, with the teachings of McDysan, directed to a VPN-aware CPE edge router, and the teachings of Oguchi, directed to the establishment of virtual links between all of the relaying apparatuses belonging to a multicast address group, to allegedly yield applying interface groups to packet communications within a particular interface group to determine when marking of control packets is to be done." In response to Appellant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In the instant case, Yu explicitly states a need in the art to withstand failover events in a network by defining which events should and should not trigger a failover in the network device (see paragraphs 0012-0013 of Yu). Therefore, Examiner notes that the references themselves provide a motivation to combine the disclosed teachings.

While the Examiner states, in the Examiner's Answer, "Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications," Appellant submits the Examiner does not appear to offer any explanation of how the Examiner can supposedly reconcile "applying interface groups..." and "...within a particular interface group" with the Examiner's alleged interpretation "determination of an interface for communications." While the Examiner, in the Examiner's Answer, states, "Examiner turns to paragraphs 0019-0025 of Appellant's specification," Appellant submits the Examiner's alleged interpretation "determination of an interface for communications"

appears to be inconsistent with, for example, "each interface has an interface-group attribute associated with it" and "Two interfaces are considered to be in one interface group if their interface-group attributes are equal" of paragraph [0058] of the specification. Accordingly, Appellant submits the Examiner has not shown the Examiner's alleged interpretation to be the broadest reasonable interpretation in view of the specification. Therefore, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 5 and 24. Thus, Appellant submits the Examiner erred in rejecting claims 5 and 24.

Claims 6 and 25:

In the Examiner's Answer, regarding claims 6 and 25, the Examiner states as follows:

> Regarding Claims 6 and 25, Appellant states that "Examiner parenthetically characterizes "the Internet" as teaching "(i.e., backbone)," without citing any reference or providing any justification or explanation as to such characterization." Examiner respectfully disagrees. Examiner notes that the claim term "backbone interface group" is not further defined in the claim language so as to require any specific characteristics of the interface group. As such, Examiner gives the claim language a broadest reasonable interpretation of interfaces connected via a backbone network. Yu discloses setting up a tunnel between interface 'd' of Network Device A and interface 'e' of Network Device B, which are remotely located from one another, via the Internet (paragraph 0033). As such, Examiner submits that the "Internet" disclosed in Yu reads on the broadest reasonable interpretation of the claimed "backbone." Appellant further states "the block diagram of Figure 4 of the Yu et al. reference does not disclose or suggest, as an example, "...the step of: applying interface groups to packet communications within a backbone interface group." Examiner respectfully disagrees. Figure 4 of Yu discloses setting up a static tunnel (i.e., "Static Tunnel A") across the Internet (i.e., backbone) between two network devices. Given its broadest reasonable interpretation, the claimed "backbone interface group" limitation is met by interface 'd', which connects Network Device A to the tunnel over the Internet.

While the Examiner, in the Examiner's Answer, states "As such, Examiner gives the claim language a broadest reasonable interpretation of interfaces connected via a backbone network" and "Yu discloses setting up a tunnel between interface 'd' of Network Device A and interface 'e' of Network Device B, which are remotely located

from one another, via the Internet (paragraph 0033)," Appellant submits "(paragraph 0033)" of the Yu reference, as cited by the Examiner, does not recite, as an example, "...backbone...." Accordingly, Appellant submits the Examiner has not shown the cited portion of the cited reference to teach or suggest the subject matter of claims 6 and 25. Thus, Appellant submits the Examiner has not made a *prima facie* showing of obviousness as to claims 6 and 25. Therefore, Appellant submits the Examiner erred in rejecting claims 6 and 25.

Claims 7 and 26:

In the Examiner's Answer, regarding claims 7 and 26, the Examiner states as follows:

> Regarding Claims 7 and 26, Appellant states "Examiner does not appear to allege teaching as to "applying interface groups to packet communications within a customer-specific interface group." Examiner notes that the claim term "customer-specific interface group" is not further defined in the claim language so as to require any specific characteristics of the interface group. As such, Examiner gives the claim language a broadest reasonable interpretation of interfaces connecting to a customer. As stated in the Office Action mailed September 8, 2010, Yu discloses communications with assigning interface 'a' to interconnect with a Host PC (i.e., applying interface groups to packet communications within customer-specific interface group given its broadest reasonable interpretation) in Figure 4. Appellant further states the cited portions of the cited references do not disclose or suggest "wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of: applying interface groups to packet communications within a customer-specific interface group." However, Examiner notes that Appellant solely alleges that the claim language is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

While the Examiner, in the Examiner's Answer, states "As such, Examiner gives the claim language a broadest reasonable interpretation of interfaces connecting to a customer" and "As stated in the Office Action mailed September 8, 2010, Yu discloses communications with assigning interface 'a' to interconnect with a Host PC (i.e., applying interface groups to packet communications within customer-specific interface group given its broadest reasonable interpretation) in Figure 4," Appellant submits

"Figure 4" of the Yu reference, as cited by the Examiner, does not recite, as an example, "...packet communications within a customer-specific interface group" or "interfaces connecting to a customer." Thus, Appellant submits the cited portion of the cited reference fails to teach or suggest both the claim language and the Examiner's alleged "broadest reasonable interpretation." Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of obviousness as to claims 7 and 26. Therefore, Appellant submits the Examiner erred in rejecting claims 7 and 26.

Claim 8 and 27:

In the Examiner's Answer, regarding claims 8 and 27, the Examiner states as follows:

> Regarding Claims 8 and 27, Appellant states that "Figure 4 of the Yu reference does not disclose or suggest "communications via a static tunnel between Network Device A and Network Device D (i.e., peer devices given its broadest reasonable interpretation) via interface 'a' on Network Device A," as alleged by Examiner. Examiner respectfully disagrees. Figure 4 clearly shows two network devices (Network Device A and Network Device D) connected to one another via a static tunnel. Setting up the static tunnel shown in Figure 4 is described further in paragraph 0046. Examiner notes that the claim term "peer interface group" is not further defined in the claim language so as to require any specific characteristics of the interface group. As such, Examiner gives the claim language a broadest reasonable interpretation of interfaces connecting to peer devices. Given its broadest reasonable interpretation, the claimed "peer interface group" limitation is met by the disclosed interface assignment (i.e., interface 'd') used in order to communicate between like devices (i.e., Network Device A and Network Device D). Appellant further states the cited portions of the cited references do not disclose or suggest "wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of: applying interface groups to packet communications within a peer interface group." However, Examiner notes that Appellant solely alleges that the claim language is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

While the Examiner, in the Examiner's Answer, states, "As such, Examiner gives the claim language a broadest reasonable interpretation of interfaces connecting to peer devices," Appellant notes paragraph [0031] of the specification states, in part, "Interface groups may be implemented for backbone connections, customer-specific interface

groups, and interface groups for peering with other service providers," and paragraph [0100] of the specification states as follows:

> An important point to keep in mind here is the fact that trust domains of the service providers are not merged when they peer with each other. Links used to peer with other service providers are put in a separate interface group from the backbone interface group. This means that even if routers of another service provider are compromised and forged packets are sent as Control to us, they would first be translated to Data encapsulation by that service provider's border router, but even if they are not fo r some reason (or if the service provider's border router is compromised), our border router will "translate" any forged control packets into Data as they cross the boundary between the peering and the backbone interface group.

Appellant submits the Examiner's alleged "broadest reasonable interpretation" is not accurately the broadest reasonable interpretation in view of the specification, as evidenced by the above-quoted portions of the specification. Accordingly, Appellant submits the Examiner assertion "Given its broadest reasonable interpretation, the claimed "peer interface group" limitation is met by the disclosed interface assignment (i.e., interface 'd') used in order to communicate between like devices (i.e., Network Device A and Network Device D)" is inconsistent with the broadest reasonable interpretation in view of the specification and the cited portion of the Yu reference does not teach or suggest the subject matter of claims 8 and 27. Therefore, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 8 and 27. Thus, Appellant submits the Examiner erred in rejecting claims 8 and 27.

Claim 9 and 28:

In the Examiner's Answer, regarding claims 9 and 28, the Examiner states as follows:

> Regarding Claims 9 and 28, Appellant states "the Yu reference appears to teach away from the Examiner's assertion that "Examiner has given the claim language "applying interface groups" its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications" and "one of ordinary skill in the art at the time the invention was made, in view of the Yu, reference, would not have understood "...define an interface group..." to merely mean "determination of an

interface for communications, as alleged by Examiner." Examiner notes that Appellant specification broadly describes interface groups at paragraph 0026: "The second is to apply a new concept of interface groups, whereby a router can determine whether a packet should be marked or not." However, the step of applying interface groups is not discussed in Appellant's specification and not further defined in the claim language. Therefore, absent any definition of the term in the specification, Examiner submits that a broadest reasonable interpretation of the claim term "applying interface groups" to reasonably encompass any interpretation of the plain meaning of "applying interface groups," such as determining the interfaces assigned to particular interface types disclosed in Yu. Further, Examiner notes that Appellant solely alleges that the claim language (i.e., the step of applying interface groups) is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

While the Examiner states, in the Examiner's Answer, "Therefore, absent any definition of the term in the specification, Examiner submits that a broadest reasonable interpretation of the claim term "applying interface groups" to reasonably encompass any interpretation of the plain meaning of "applying interface groups," such as determining the interfaces assigned to particular interface types disclosed in Yu," Appellant submits the Examiner does not appear to offer any explanation of how the Examiner can supposedly reconcile "applying interface groups…" and "…to packet communications between interface groups" with the Examiner's alleged interpretation "such as determining the interfaces assigned to particular interface types disclosed in Yu." Appellant notes the Examiner cites "(Figure 4,…(e.g., between Network Device A and Network Device D),…(e.g., in Network Device A between interfaces 'a' and 'd', and…(e.g., between Network Device A at interface 'a' and Host PC 12)" of the Yu reference, which Appellant submits fails to disclose or suggest "such as determining the interfaces assigned to particular interface types disclosed in Yu," as alleged by the Examiner. Therefore, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 9 and 28. Thus, Appellant submits the Examiner erred in rejecting claims 9 and 28.

Claim 10 and 29:

In the Examiner's Answer, regarding claims 10 and 29, the Examiner states as follows:

> Regarding Claims 10 and 29, Appellant states that "Figure 4 of the Yu reference does not disclose "applying interface groups to packet communications between backbone and customer-specific groups (Figure 4, connections between backbone (e.g., in Network Device A between interfaces 'a' and 'd' and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12)." Appellant further states that "Yu teaches away from "applying interface groups" to connections between backbone.... and customer networks...as Appellant submits such an alleged "applying interface groups" would appear to render inoperable the "tunnel failover ... without running a dynamic routing protocol" described in paragraph [0034] of the Yu reference." However, Examiner notes that Appellant has provided no evidence that the disclosure of defining interfaces between a backbone network and a customer network, such as that disclosed in Yu, would render a failover inoperable. Further, Examiner notes that Appellant has not described how an interpretation of the claim term "applying interface groups," which is not defined in the specification as described above, would lead to such a conclusion. Further, Appellant states that "the cited portions of the cited references do not disclose wherein the step of applying interface groups to packet communications between interface groups further comprises the step of: applying interface groups to packet communications backbone and customer-specific interface groups." However, Examiner notes that Appellant solely alleges that the claim language (i.e., the step of applying interface groups) is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

Appellant submits Figure 4 of the Yu reference, as cited by the Examiner, does not disclose or suggest "applying interface groups to packet communications between backbone and customer-specific groups (Figure 4, connections between backbone (e.g., in Network Device A between interfaces 'a' and 'd' and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12)." Appellant submits Figure 4 does not disclose "connections between backbone (e.g., in Network Device A between interfaces 'a' and 'd' and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12)." Thus, Appellant submits the Examiner has not shown the cited portion of the cited reference to teach or suggest "applying interface groups to packet communications between backbone and customer-specific groups." Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of

obviousness as to claims 10 and 29. Therefore, Appellant submits the Examiner erred in rejecting claims 10 and 29.

Claim 11 and 30:

In the Examiner's Answer, regarding claims 11 and 30, the Examiner states as follows:

> Regarding Claims 11 and 30, Appellant states that "Figure 4 of the Yu reference does not disclose "applying interface groups to packet communications between customer-specific and peer interface groups (Figure 4, connections between peer (e.g., between Network Device A and Network Device D) and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12)." Appellant further states that "Yu teaches away from "applying interface groups" to connections between peer .... and customer networks...as Appellant submits such an alleged "applying interface groups" would appear to render inoperable the "tunnel failover ... without running a dynamic routing protocol" described in paragraph [0034] of the Yu reference." However, Examiner notes that Appellant has provided no evidence that the disclosure of defining interfaces between a backbone network and a customer network, such as that disclosed in Yu, would render a failover inoperable. Further, Examiner notes that Appellant has not described how an interpretation of the claim term "applying interface groups," which is not defined in the specification as described above, would lead to such a conclusion. Further, Appellant states that "the cited portions of the cited references do not disclose wherein the step of applying interface groups to packet communications between interface groups further comprises the step of. applying interface groups to packet communications customer-specific and peer interface groups." However, Examiner notes that Appellant solely alleges that the claim language (i.e., the step of applying interface groups) is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

Appellant submits Figure 4 of the Yu reference, as cited by the Examiner, does not disclose or suggest "applying interface groups to packet communications between customer-specific and peer interface groups (Figure 4, connections between peer (e.g., between Network Device A and Network Device D) and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12)." Appellant submits Figure 4 does not disclose "connections between peer (e.g., between Network Device A and Network Device D) and customer networks (e.g., between Network Device A at interface 'a' and Host PC 12)." Thus, Appellant submits the Examiner has not shown the

cited portion of the cited reference to teach or suggest "applying interface groups to packet communications between customer-specific and peer interface groups." Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of obviousness as to claims 11 and 30. Therefore, Appellant submits the Examiner erred in rejecting claims 11 and 30.

Claim 12 and 31:

In the Examiner's Answer, regarding claims 12 and 31, the Examiner states as follows:

> Regarding Claims 12 and 31, Appellant states that "Examiner parenthetically characterizes "the Internet" as teaching "(i.e., backbone),"without citing any reference or providing any justification or explanation as to such characterization." Examiner respectfully disagrees. Examiner notes that the claim term "backbone interface group" is not further defined in the claim language so as to require any specific characteristics of the interface group. As such, Examiner gives the claim language a broadest reasonable interpretation of interfaces connected via a backbone network. Yu discloses setting up a tunnel between interface 'd' of Network Device A and interface 'e' of Network Device B, which are remotely located from one another, via the Internet (paragraph 0033). As such, Examiner submits that the "Internet" disclosed in Yu reads on the broadest reasonable interpretation of the claimed "backbone" and that the interface 'd' in Network Device A belongs to a "backbone interface group." Appellant further states that citing Network Device A between interfaces 'a' and 'd' as "teaching a "backbone" is "inconsistent and contradictory." Examiner respectfully disagrees. Figure 4 of Yu shows that Interface "d" of Network Device A is connected to the Internet, which Examiner has established as teaching "backbone." Therefore, the disclosure of applying interface groups to packet communications between peer interface groups (e.g., between Network Device A and Network Device D) and backbone (e.g., in Network Device A between interfaces 'a' (to a LAN) and 'd' (to the Internet)) reads on the broadest interpretation of the claimed "applying interface groups between backbone and peer interface groups." Further, Appellant states that "the cited portions of the cited references do not disclose wherein the step of applying interface groups to packet communications between interface groups further comprises the step of: applying interface groups to packet communications backbone and peer interface groups." However, Examiner notes that Appellant solely alleges that the claim language (i.e., the step of applying interface groups) is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

Appellant submits Figure 4 of the Yu reference, as cited by the Examiner, does not disclose or suggest "applying interface groups to packet communications between

peer interface groups (e.g., between Network Device A and Network Device D) and backbone (e.g., in Network Device A between interfaces 'a' (to a LAN) and 'd' (to the Internet))." Appellant submits Figure 4 does not disclose "packet communications between peer interface groups (e.g., between Network Device A and Network Device D) and backbone (e.g., in Network Device A between interfaces 'a' (to a LAN) and 'd' (to the Internet))." Appellant submits "(paragraph 0033)" of the Yu reference, as cited by the Examiner, does not recite, as an example, "…backbone…." While the Examiner, in the Examiner's Answer, states, "As such, Examiner submits that the 'Internet' disclosed in Yu reads on the broadest reasonable interpretation of the claimed 'backbone' and that the interface 'd' in Network Device A belongs to a 'backbone interface group,'" Appellant submits the Examiner's alleged "broadest reasonable interpretation" does not appear to be the broadest reasonable interpretation in view of the specification, for example, paragraph [0093] of the specification and its heading "Backbone-only Routers." Accordingly, Appellant submits the Examiner has not shown the cited portion of the cited reference to teach or suggest the subject matter of claims 12 and 31. Thus, Appellant submits the Examiner has not made a *prima facie* showing of obviousness as to claims 12 and 31. Therefore, Appellant submits the Examiner erred in rejecting claims 12 and 31.

The Fourth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 13 and 32 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Holden et al. (United States Patent No. 5,802,178). Appellant respectfully disagrees.

Claim 13 and 32:

In the Examiner's Answer, regarding claims 13 and 32, the Examiner states as follows:

> Regarding Claims 13 and 32, Appellant states "Examiner appears to characterize the teachings of Holden in a manner that teaches away from the subject matter of claims 13 and 32." Appellant further states "claims 13 and 32 depend indirectly from claims 1 and 20, which recite "marking packets carrying the Layer-3 control information," while the Examiner alleges teaching as to marking "an ICMP Echo Reply." Examiner respectfully disagrees. Examiner notes that the claim language in claims 13 and 32 requires "applying interface groups to communication of ICMP packets." While McDysan is relied on disclose applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker), as claimed in parent claims 4 and 23, Holden discloses a secure network interface unit (SNIU) that marks the protocol and type fields to indicate an ICMP Echo Reply, signs the packet, and sends through an interface (column 20, line 66 - column 21, line 10). Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." As such, Examiner submits that the combination of the packet marking based on source and destination port identifiers disclosed in McDysan, the encapsulation disclosed in Oguchi, and the ICMP Echo packet processing disclosed in Holden discloses the claim limitation "applying interface groups to communication of ICMP packets."

Appellant submits the cited portions of the cited references fail to render obvious "applying interface groups to communication of ICMP packets." While the Examiner, in the Examiner's Answer, alleges "Holden discloses a secure network interface unit (SNIU) that marks the protocol and type fields to indicate an ICMP Echo Reply, signs the packet, and sends through an interface (column 20, line 66 - column 21, line 10)," Appellant notes the cited portion of the Holden reference states as follows:

> Once the Association Table entries are updated, an Association Grant Message is generated. The SNIU uses the peer (i.e., originating) SNIU's IP for the destination, uses the original destination host's IP for the source, and marks the protocol and type fields to indicate an ICMP Echo Reply. The SNIU inserts its IP address, its certificate, its host's security level, the

association key data (wrapped key and RA), and if necessary, the release key data (the wrapped key, RA and IV). The SNIU Message Flag is inserted at the bottom marking the type as Association Grant and the format as Signed Type 1 to indicate only one certificate. The message is signed and sent.

Appellant notes, with respect to claims 5 and 24, regarding claim language as to "applying interface groups," the Examiner alleges "Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications." Appellant submits the Examiner's alleged interpretation "determination of an interface for communications" appears to be inconsistent with, for example, "each interface has an interface-group attribute associated with it" and "Two interfaces are considered to be in one interface group if their interface-group attributes are equal" of paragraph [0058] of the specification. Accordingly, Appellant submits the Examiner has not shown the Examiner's alleged interpretation to be the broadest reasonable interpretation in view of the specification.

Moreover, Appellant submits the alleged teachings of Holden appear not to teach or suggest "applying interface groups" even under the Examiner's alleged "broadest reasonable interpretation" of "applying interface groups." While the cited portion of Holden refers to "...an Association Grant Message is generated..." and "...signed and sent," Appellant submits the cited portion of the Holden reference does not appear to provide "determination of an interface for communications." Accordingly, under either the Examiner's alleged "broadest reasonable interpretation" or the broadest reasonable interpretation in view of the specification, Appellant submits the cited portions of the cited references fail to render unpatentable the subject matter of claims 13 and 32. Therefore, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 13 and 32. Thus, Appellant submits the Examiner erred in rejecting claims 13 and 32.

The Fifth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 14 and 33 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Ogushi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Pan et al. (United States Patent 7,336,615). Appellant respectfully disagrees.

Claim 14 and 33:

In the Examiner's Answer, regarding claims 14 and 33, the Examiner states as follows:

> Regarding Claims 14 and 33, Appellant states "assigning predetermined port numbers to LSP ping messages" fails to disclose or suggest applying interface groups to determine when marking of control packets is to be done, wherein applying interface groups to determine when marking of control packets is to be done comprises applying interface groups to communication of ping packets, and marking packets carrying Layer-3 control information, as "assigning predetermined port numbers to LSP ping messages" does not teach or suggest "to determine when marking of control packets is to be done." Examiner notes that McDysan is relied on disclose applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker), as claimed in parent claims 4 and 23. However, Examiner notes that Appellant solely alleges that the claim language (i.e., "applying interface groups to ping packets") is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

Appellant submits the cited portions of the cited references fail to render unpatentable the subject matter of claims 14 and 33. While the Examiner cites "(column 14, lines 48-55)" of the Pan reference as allegedly disclosing "applying interface groups to communication of ping packets," Appellant notes the cited portion of the cited reference states as follows:

Returning to block 904, if an LSP_ping message is received by the egress LSR, the method 474' proceeds to block 908. As mentioned earlier, the LSP_ping message is encapsulated in a protocol, (e.g., UDP) which assigns a predetermined port number to LSP_ping messages. As indicated by block 908, the LSP_ping message is queued according to the protocol in which it is encapsulated. Then method 474' proceeds to decision block 909.

Appellant notes, with respect to claims 5 and 24, regarding claim language as to "applying interface groups," the Examiner alleges "Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications." Appellant submits the Examiner's alleged interpretation "determination of an interface for communications" appears to be inconsistent with, for example, "each interface has an interface-group attribute associated with it" and "Two interfaces are considered to be in one interface group if their interface-group attributes are equal" of paragraph [0058] of the specification. Accordingly, Appellant submits the Examiner has not shown the Examiner's alleged interpretation to be the broadest reasonable interpretation in view of the specification.

Moreover, Appellant notes claims 14 and 33 recite "…wherein the step of applying interface groups further comprises the step of: applying interface groups to communication of ping packets," which depend from claim 4 and 23, respectively, which recite "…applying interface groups to determine when marking of control packets is to be done" and submits the alleged teachings of Pan appear not to teach or suggest "applying interface groups" in such context even under the Examiner's alleged "broadest reasonable interpretation" of "applying interface groups." Appellant submits the cited portion of Pan does not appear to mention "interface" or "determination of an interface for communications." Thus, Appellant submits the Examiner has not shown the cited portion of the Pan reference to provide "determination of an interface for communications." Accordingly, under either the Examiner's alleged "broadest reasonable interpretation" or the broadest reasonable interpretation in view of the

specification, Appellant submits the cited portions of the cited references fail to render unpatentable the subject matter of claims 14 and 33.

Therefore, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 14 and 33. Thus, Appellant submits the Examiner erred in rejecting claims 14 and 33.

The Sixth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 15 and 34 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Fotedar et al. (United States Patent Application Publication 2004/0085965 A1). Appellant respectfully disagrees.

Claim 15 and 34:

In the Examiner's Answer, regarding claims 15 and 34, the Examiner states as follows:

> Regarding Claims 15 and 34, Appellant states "assignment of traceroute packets to a virtual router address indicative of a loopback interface" fails to disclose or suggest applying interface groups to determine when marking of control packets is to be done, wherein applying interface groups to determine when marking of control packets is to be done comprises applying interface groups to communication of traceroute packets, and marking packets carrying Layer-3 control information, as "assignment of traceroute packets to a virtual router address indicative of a loopback interface" does not teach or suggest "to determine when marking of control packets is to be done." Examiner notes that McDysan is relied on disclose applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker), as claimed in parent claims 4 and 23. However, Examiner notes that Appellant solely alleges that the claim language (i.e., "applying interface groups to traceroute packets") is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

Appellant submits the cited portions of the cited references fail to render unpatentable the subject matter of claims 15 and 34. Appellant notes, with respect to claims 5 and 24, regarding claim language as to "applying interface groups," the Examiner alleges "Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications." Appellant submits the Examiner's alleged interpretation "determination of an interface for communications" appears to be inconsistent with, for example, "each interface has an interface-group attribute associated with it" and "Two interfaces are considered to be in one interface group if their interface-group attributes are equal" of paragraph [0058] of the specification. Accordingly, Appellant submits the Examiner has not shown the Examiner's alleged interpretation to be the broadest reasonable interpretation in view of the specification.

Moreover, Appellant notes claims 15 and 34 depend from claims 4 and 23, respectively. While the Examiner, in the Examiner's Answer, states, "Examiner notes that McDysan is relied on disclose applying interface groups to determine when marking of control packets is to be done (Figure 5 and paragraph 0036, wherein the classifier in the LAN port determines by reference to a classifier table indexed by multiple indices, such as source port and destination port, to determine an interface for communication and to send values to a packet marker), as claimed in parent claims 4 and 23," Appellant submits the cited portions of the McDysan reference fail to render obvious claims 4 and 23, as Appellant discussed with reference to claims 4 and 23. Therefore, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 15 and 34. Thus, Appellant submits the Examiner erred in rejecting claims 15 and 34.

The Seventh Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 16 and 35 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 4 and 23 above, and further in view of Tuomenoksa et al. (United States Patent Application Publication 2002/0023210 A1). Appellant respectfully disagrees.

Claim 16 and 35:

In the Examiner's Answer, regarding claims 16 and 35, the Examiner states as follows:

> Regarding Claims 16 and 35, Appellant states "setting up a tunnel interface with a NOC (paragraph 0136) and communicating packets, including control information, with the NOC via the tunnel (paragraphs 0141- 0143)" fails to disclose or suggest applying interface groups to determine when marking of control packets is to be done, wherein applying interface groups to determine when marking of control packets is to be done comprises applying interface groups to communication of packets from Network Operations Center (NOC) hosts, and marking packets carrying Layer-3 control information, as "setting up a tunnel interface with a NOC (paragraph 0136) and communicating packets, including control information, with the NOC via the tunnel (paragraphs 0141-0143)" does not teach or suggest "to determine when marking of control packets is to be done." Appellant further states "setting up a tunnel interface with a NOC" does not disclose or suggest "applying interface groups to communication of packets from Network Operations Center (NOC) hosts." However, Examiner notes that Appellant solely alleges that the claim language (i.e., "applying interface groups to communication of packets from NOC hosts") is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art.

Appellant submits the cited portions of the cited references fail to render unpatentable the subject matter of claims 16 and 35. While the Examiner cites "(paragraph 0136)," "(paragraphs 0141-0143)," and "(see paragraphs 0016 and 0017 of Tuomenoksa)" of the Tuomenoksa reference in relation to "applying interface groups to communication of packets from Network Operations Center (NOC) hosts," Appellant

notes, with respect to claims 5 and 24, regarding claim language as to "applying interface groups," the Examiner alleges "Examiner has given said claim language its broadest reasonable interpretation in view of the specification to comprise determination of an interface for communications." Appellant submits the Examiner's alleged interpretation "determination of an interface for communications" appears to be inconsistent with, for example, "each interface has an interface-group attribute associated with it" and "Two interfaces are considered to be in one interface group if their interface-group attributes are equal" of paragraph [0058] of the specification. Accordingly, Appellant submits the Examiner has not shown the Examiner's alleged interpretation to be the broadest reasonable interpretation in view of the specification. Therefore, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 16 and 35. Thus, Appellant submits the Examiner erred in rejecting claims 16 and 35.

The Eighth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 18 and 37 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 1 and 20 above, and further in view of Johansson (United States Patent 6,061,330). Appellant respectfully disagrees.

Claim 18 and 37:

In the Examiner's Answer, regarding claims 18 and 37, the Examiner states as follows:

> Regarding Claims 18 and 37, Appellant states "the Examiner does not appear to allege any teaching or suggestion as to, for example, "unmarked control packets." Rather, Appellant notes, with respect to claims 1 and 20, from which claims 18 and 37 depend,

the Examiner alleges "...McDysan discloses marking packets via a DSCP code point in IP packet .... " Thus, Appellant submits the combination of references cited by the Examiner appear to teach away from "unmarked control packets." Moreover, Appellant submits the "cells" of Johansson fail to disclose or suggest "unmarked control packets." Appellant states that the cited portions of the cited references do not disclose "control packets." Examiner respectfully disagrees. The claim language "control packets" is not further defined in the claim language so as to further limit the content or structure of the claimed "control packet." As such, Examiner has given the claim term its broadest reasonable interpretation without unnecessarily importing limitations from the specification and interpreted "control packet" to comprise any messaging related to control of communications (e.g., setup, teardown, parameter management, etc.). Further, per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Johansson references are directed to processing data packets and are therefore in analogous arts." While McDysan discloses processing control information in a network (paragraphs 0037 and 0042), the combination of McDysan and Oguchi does not disclose processing the control packets at a line rate. In the same field of endeavor, Figure 4a, step 410 of Johansson "determines when a predetermined number Input RateLimit of Cells are received" (column 10, lines 45-47), wherein the cells contain basic ATM functions such as VPI/VCI translation and payload type indicator operations (i.e., the cells are unmarked). As such, Johansson provides a general teaching of a rate-limited queue receiving unmarked control packets.

Appellant submits the cited portions of the cited references fail to render unpatentable the subject matter of claims 18 and 37. Appellant notes the Examiner alleges teaching as to "marking packets carrying the Layer-3 control information" with respect to independent claims 1 and 20, from which claims 18 and 37 depend. Appellant notes paragraph [0042] of the McDysan (US 2003/0112755 A1) reference states, in part, "Marker M0 remarks all packets received at LP-2 110b with DSCP 0000, thus identifying the packets as best-effort traffic." While such portion states "…remarks all packets received…," Appellant notes the Examiner alleges as follows:

> In the same field of endeavor, Figure 4a, step 410 of Johansson "determines when a predetermined number Input RateLimit of Cells are received" (column 10, lines 45-47), wherein the cells contain basic ATM functions such as VPI/VCI translation and payload type indicator operations (i.e., the cells are unmarked). As such, Johansson provides a general teaching of a rate-limited queue receiving unmarked control packets.

While the Examiner alleges it would have been obvious to combine the alleged teachings of the McDysan reference with the alleged teachings of the Johansson reference, Appellant submits the "…remarks all packets received…" of McDysan teaches away from the alleged "(i.e., the cells are unmarked)" of Johansson. Moreover, Appellant submits the Examiner has not reconciled the "cells" of Johansson with the "packets" of McDysan. Thus, Appellant submits the Examiner has not shown that it would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the alleged teachings of the cited references to have allegedly obtained the subject matter of claims 18 and 37. Accordingly, Appellant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 18 and 37. Therefore, Appellant submits the Examiner erred in rejecting claims 18 and 37.

The Ninth Ground of Rejection to be Reviewed upon Appeal:

The Examiner has rejected claims 19 and 38 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent Application Publication 2003/0112755 A1) in view of Oguchi et al. (U.S. Patent Publication No. US 2002/0067725 A1) as applied to claims 1 and 20 above, and further in view of Hussey et al. (United States Patent Application Publication 2001/0049744 A1). Appellant respectfully disagrees.

Claim 19 and 38:

In the Examiner's Answer, regarding claims 19 and 38, the Examiner states as follows:

> Regarding Claims 19 and 38, Appellant states "the cited portions of the cited references do not disclose or suggest "receiving the packets as received packets; and processing the received packets at a line rate." While the Examiner cites "(paragraph 0050)" of the Hussey reference, Appellant submits "(paragraph 0050)" of the Hussey reference states, in part, "...receives a packet data stream via the communication network 110 at a line

rate .... .. Appellant submits such teaching does not disclose or suggest "receiving the packets as received packets" and "processing the received packets at a line rate."" However, Examiner notes that Appellant solely alleges that the claim language (i.e., "receiving the packets as received packets" and "processing the received packets at a line rate") is not disclosed or suggested in the prior art and does not particular point how the claims are patentably distinguishable from the prior art. Appellant states "even if an attempt were made to combine the teachings of the Hussey reference and the McDysan reference, such an attempted combination would not yield the subject matter of Claims 19 and 38." Per MPEP 2143.01: "The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art, and all teachings in the prior art must be considered to the extent that they are in analogous arts." The McDysan, Oguchi, and Hussey references are directed to processing data packets and are therefore in analogous arts. Further, Hussey discloses a processor pool aggregation technique wherein a communication device "receives a packet data stream via the communication network ... at a line rate that might otherwise overwhelm the processing capabilities of the NIC ... and result in dropped packets and reduced quality of service" (paragraph 0050).

The Examiner, in the Examiner's Answer, states "Further, Hussey discloses a processor pool aggregation technique wherein a communication device 'receives a packet data stream via the communication network ... at a line rate that might otherwise overwhelm the processing capabilities of the NIC ... and result in dropped packets and reduced quality of service' (paragraph 0050)," and alleges combination of the alleged teachings of the McDysan, Oguchi, and Hussey references to allegedly yield the subject matter of claims 19 and 38. The Examiner alleges teaching in McDysan as to "marking packets carrying Layer-3 control information (paragraphs 0037 and 0042, wherein packets are marked with a differentiated services code point (DSCP) value" and alleges teaching in Oguchi as to "encapsulating an L2TP VPN packet comprising Layer-2 encapsulation (paragraph 0215, Figure 25, wherein a packet containing L2TP is encapsulated with a PPP or Ethernet header." Appellant submits the Examiner has not shown how allegedly adding the additional processing burdens of "marking packets carrying Layer-3 control information" alleged with respect to McDysan and "encapsulating an L2TP VPN packet comprising Layer-2 encapsulation" alleged with respect to Oguchi would not "overwhelm the processing capabilities of the NIC" alleged with respect to Hussey, thereby preventing a communication device from receiving "a

packet data stream via the communication network ... at a line rate that might otherwise overwhelm the processing capabilities of the NIC ... and result in dropped packets and reduced quality of service," as alleged with respect to Hussey. Accordingly, Appellant submits the Examiner has not shown the alleged combination to yield the subject matter of claims 19 and 38. Therefore, Appellant submits the Examiner has not made a *prima facie* showing with respect to claims 19 and 38. Thus, Appellant submits the Examiner erred in rejecting claims 19 and 38.

CLAIMS APPENDIX

1.   (Previously Presented) A method for communicating Layer-3 control information in a communications network comprising the steps of:

marking packets carrying the Layer-3 control information;

encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying

        trusted control information.

2.   (Original) The method of claim 1 wherein the step of marking further comprises:

marking the packets using a unique protocol identifier.

3.   (Original) The method of claim 1 wherein the step of marking further comprises:

marking the packets using a link-local MPLS label.

4.   (Original) The method of claim 1 further comprising the step of:

applying interface groups to determine when marking of control packets is to be done.

5.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications within a particular interface group.

6.   (Original) The method of claim 5 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a backbone interface group.

7.   (Original) The method of claim 5 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a customer-specific
        interface group.

8.   (Original) The method of claim 5 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a peer interface group.

9.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications between interface groups.

10.   (Original) The method of claim 9 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between backbone and customer-
        specific interface groups.

11.   (Original) The method of claim 9 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between customer-specific and peer interface groups.

12.   (Original) The method of claim 9 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of: applying interface groups to packet communications between backbone and peer interface groups.

13.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:
applying interface groups to communication of ICMP packets.

14.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:
applying interface groups to communication of ping packets.

15.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:
applying interface groups to communication of traceroute packets.

16.   (Original) The method of claim 4 wherein the step of applying interface groups further comprises the step of:
applying interface groups to communication of packets from Network Operations Center (NOC) hosts.

17.   (Original) The method of claim 1 wherein the step of encapsulating the packets further comprises:

encapsulating the packets according to control encapsulation.

18.   (Original) The method of claim 1 further comprising:

receiving unmarked control packets using rate-limited queues.

19.   (Original) The method of claim 1 further comprising:

receiving the packets as received packets; and

processing the received packets at a line rate.

20.   (Previously Presented) An apparatus comprising a network element for communicating Layer-3 control information in a communications network adapted to perform the steps of:

marking packets carrying the Layer-3 control information;

encapsulating the packets at Layer-2 to uniquely identify Layer-2 frames as carrying
       trusted control information.

21.   (Original) The apparatus of claim 20 wherein the step of marking further comprises:

marking the packets using a unique protocol identifier.

22.   (Original) The apparatus of claim 20 wherein the step of marking further comprises:

marking the packets using a link-local MPLS label.

23.   (Original) The apparatus of claim 20 wherein the network element is further adapted to perform the step of:

applying interface groups to determine when marking of control packets is to be done.

24.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications within a particular interface group.

25.   (Original) The apparatus of claim 24 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a backbone interface group.

26.   (Original) The apparatus of claim 24 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a customer-specific
        interface group.

27.   (Original) The apparatus of claim 24 wherein the step of applying interface groups to packet communications within a particular interface group further comprises the step of:

applying interface groups to packet communications within a peer interface group.

28.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to packet communications between interface groups.

29. (Original) The apparatus of claim 28 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between backbone and customer-
     specific interface groups.

30. (Original) The apparatus of claim 28 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between customer-specific and
     peer interface groups.

31. (Original) The apparatus of claim 28 wherein the step of applying interface groups to packet communications between interface groups further comprises the step of:

applying interface groups to packet communications between backbone and peer
     interface groups.

32. (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of ICMP packets.

33. (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of ping packets.

34.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of traceroute packets.

35.   (Original) The apparatus of claim 23 wherein the step of applying interface groups further comprises the step of:

applying interface groups to communication of packets from Network Operations
        Center (NOC) hosts.

36.   (Original) The apparatus of claim 20 wherein network element is further adapted to encapsulate the packets according to control encapsulation.

37.   (Original) The method of claim 20 wherein the network element is further adapted to receive unmarked control packets using rate-limited queues.

38.   (Original) The apparatus of claim 20 wherein the network element is further adapted to receive the packets as received packets and to process the received packets at a line rate.

EVIDENCE APPENDIX

As presently advised, no evidence was submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132. Appellant mailed an information disclosure statement PTO/SB/08 on June 7, 2004, citing VIJAY GILL, JOHN HEASLY, and DAVID MEYER; The BGP TTL Security Hack (BTSH); 2002; Phoenix, AZ, USA. Appellant mailed an information disclosure statement PTO/SB/08 on November 15, 2004, citing JOHANSSON, P.; "IPv4 Over IEEE 1394"; Network Working Group Request for Comments: 2734; December 1999; Pgs. 1-29; The Internet Society; H.T. KUNG, ET AL.; "TCP Trunking: Design, Implementation and Performance"; October 31,1999; Pgs. 222-231; HARVARD UNIVERSITY; Cambridge, MA, USA; ARMITAGE, GRENVILLE; "MPLS: The Magic Behind the Myths"; IEEE Communications Magazine; January 2000; Pgs. 124-131; IEEE Service Center; Piscataway, N.J.; USA; M. BALTATU, ET AL.; "Security Issues in Control, Management and Routing Protocols"; Computer Networks; December 2000; Pgs. 881-894; Volume 34, No. 6; Elsevier Science Publishers B.V.; Amsterdam,, NL; and ED OSKIEWICZ, ET AL.; "A Model for Interface Groups"; ANSA; May 19, 1994; Pgs. 1-38; Retrieved From the Internet; Cambridge, United Kingdom. Appellant mailed an information disclosure statement PTO/SB/08 on February 15, 2005, citing WO 01/69852 A2, 09-20-2001, of Riverdelta Networks, and HLUCHYJ M G ET AL.: "Queueing Disciplines for Integrated Fast Packet Networks" Discovering a New World of Communications, Chicago, June 14-18, 1992, Pages 990-996, Vol. 4, IEEE, New York, USA. In the Notice of References Cited (Form PTO-892) included with the Office action mailed June 27, 2007, the Examiner cited U.S. Patent No. 6,731,652, issued to Ramfelt et al., U.S. Patent No. 7,126,952, issued to Hooper et al., and U.S. Patent Application Publication 2003/0112749, of Hassink et al. In the Notice of References Cited (Form PTO-892) included with the Office action mailed April 23, 2008, the Examiner cited U.S. Patent No. 7,046,680, issued to McDysan et al., U.S. Patent Application

Publication 2002/0116501 A1, of Ho et al., U.S. Patent No. 6,061,330, issued to Johansson, U.S. Patent Application Publication 2001/0049744 A1, of Hussey et al., U.S. Patent Application Publication 2004/0054924 A1, of Chuah et al., U.S. Patent Application Publication 2004/0010583 A1, of Yu et al., U.S. Patent 7,336,615, issued to Pan et al., U.S. Patent Application Publication 2002/0085498 A1, of Nakamichi et al., and U.S. Patent Application Publication 2004/0085965 A1, of Fotedar. With Appellant's response mailed July 23, 2008, Appellant included a copy of the then-current Wikipedia (http://en.wikipedia.org) entry for Layer 2 Tunneling Protocol (L2TP). In the Notice of References Cited (Form PTO-892) included with the Office action mailed November 24, 2008, the Examiner additionally cited U.S. Patent Application Publication 2003/0152078 A1, of Henderson et al. In the Notice of References Cited (Form PTO-892) included with the Office action mailed June 5, 2009, the Examiner additionally cited Almquist, RFC 1349: Type of Service in the Internet Protocol Suite, July 1992, Internet Engineering Task Force Network Working Group and The OSI Reference Model, October 20, 2002, Available online: http://web.archive.org/web/20021020084747/http://www.thecertificationhub.com/netwo rkplus/the_osi_ref_model.htm. In the Notice of References Cited (Form PTO-892) included with the Office action mailed February 22, 2010, the Examiner cited U.S. Patent No. 5,802,178, issued to Holden et al.; U.S. Patent Application Publication 2002/0023210, of Tuomenoksa et al.; U.S. Patent Application Publication 2003/0112755, of McDysan; and U.S. Patent Application Publication 2002/0067725, of Oguchi et al. As the Examiner relied upon the following evidence in support of the final rejection, Appellant relies upon such evidence in the appeal: U.S. Patent Application Publication 2003/0112755, of McDysan; U.S. Patent Application Publication 2002/0067725, of Oguchi et al.; U.S. Patent Application Publication 2002/0085498 A1, of Nakamichi et al.; U.S. Patent Application Publication 2004/0010583 A1, of Yu et al.; U.S. Patent No. 5,802,178, issued to Holden et al.; U.S. Patent 7,336,615, issued to Pan

et al.; U.S. Patent Application Publication 2004/0085965 A1, of Fotedar; U.S. Patent Application Publication 2002/0023210, of Tuomenoksa et al.; U.S. Patent No. 6,061,330, issued to Johansson; and U.S. Patent Application Publication 2001/0049744 A1, of Hussey et al., copies of which were provided with Appellant's appeal brief.

RELATED PROCEEDINGS APPENDIX

As stated above, as presently advised, there are no other prior or pending appeals, interferences, or judicial proceedings known to Appellant, the Appellant's legal representative, or Assignee which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal. Thus, no copies of decisions rendered by a court or by the Board are provided.

Respectfully submitted,

___12/24/2011_____   ___/Ross D. Snyder #37730/_____
Date   Ross D. Snyder, Reg. No. 37,730
                                         Attorney for Appellant(s)
                                         Ross D. Snyder & Associates, Inc.
                                         PO Box 164075
                                         Austin, Texas 78716-4075
                                         (512) 347-9223 (phone)
                                         (512) 347-9224 (fax)